1/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INSTABILITY OF A WEAKLY INHOMOGENEOUS PLASMA WITH TWO SPECIES OF

IONS IN THE ABSENCE OF A MAGNETIC FIELD -U-

AUTHOR-(03)-GUREVICH, L.E., VAGNER, I.D., 'IOFFE, I.V.

COUNTRY OF INFO--USSR

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 1, P. 49-52 (JAN. 1970)

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--INHOMOGENEOUS PLASMA, PLASMA INSTABILITY, MAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3005/1792

STEP NO--US/0000/70/011/001/0049/0052

CIRC ACCESSION NO--AP0133697

UMCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70 CIRC ACCESSION NO--APO133697 ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. INSTAIBLITY IS SHOWN TO BE POSSIBLE IN THE ABSENCE OF A MAGNETIC FIELD, IF THE ELECTRON MOBILITY DEPENDS ON THE COORDINATES. FACILITY: USSR ACAD. SCIS.

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"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002201110019-4

Acc. Nr: AP0043691

Ref. Code: UR 0056

PRIMARY SOURCE: Zh

Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 3, pp/207-/0//

ON EXCITATION OF TRANSVERSE WAVES IN INDIUM ANTIMONADE IN AN EXTERNAL MAGNETIC FIELD BY A STRONG CURRENT

I. D. Vagner, I. V. Joffe, A. A. Katanon

It is shown that a strong current flowing through indium antimonide located in a strong magnetic field excites Cherenkov emission of helikoidal waves. The magnitudes of the currents and fields required for excitation to occur are found. The magnetic field strength of the current is found to be much smaller than that of the external field. For a cylindrical sample with a radius much smaller than its length, the frequency and critical current values are close to those found experimentally.

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REEL/FRAME 19770095 tel

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USSR

TOFFE, I. V., MAZAKOV, A. L., Physico-Technical Institute imeni A. F. Ioffe, Academy of Sciences, USSR, Leningrad.

"Reflection, Refraction, and Self-Focusing of Sound Mayes in Electrical Field"

Leningrad, Fizika Tverdoto Tela, Vol 12, No 4, April 1970, pp 1036-1043

Abstract: It has been shown elsewhere that in crystals located close to a ferroelectric Curie point, the presence of an external electrical field E substantially changes the acoustical properties. The present work investigates the laws of reflection and refraction of sound at the boundary of such crystals, as well as the phenomena of the self-focusing of sound in the electrical field. As in the case of a piezoelectric crystal, an additional surface wave originates during reflection and refraction. It is shown that the angles of reflection and refraction in a nonmonotonic form depend on the magnitude and direction of the electrical field. Focusing of the reflected and refracted waves is possible at certain directions of 1/2

USSR

IOFFE, I. V., et al, Pisika Tverdogo Tela, Vol 12, No 4, April 1970, pp 1038-1045

the electrical field. Directions of the electrical field and of the incident wave at which the reflected and refracted waves disappear and only the surface wave remains are also possible. It is also shown that the abrupt change of temperature at the boundary of the two media arising from the presence of heat flux may increase substantially in the electrical field. In conclusion, it is shown that self-focusing may take place during passage of a narrow beam of sound. The results obtained are correct in all ranges of the electrical fields E and the varying speed of sound S, except for dependence on the fact that one must take into account the variations of temperature. 2 fig. 10 ref. Received by the editors 19 October 1969.

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USSR

IOFFE, L. A., All-Union Scientific Research Institute of Physical Culture

"Effect of Hypokinesia on the Efficacy of the Training Process"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, Vol 34, No 8, 1971, pp 21-24

Abstract: The effect of hypokinesia (10 and 40 days of bed rest and 5 days of water immersion) on 16 pole vaulters and 14 medium and long distance runners aged 24-40 years was studied. Functional tests requiring physical exertion were conducted initially and 1-3 days after bedrest and water immersion regimens. The required exertion was in the form of 10minute pedalling on a bycicle ergometer at a constant rate. Maximum running speed was determined with the help of a treadmill the movement of which was accelerated until the persons being tested failed to keep up with the increasing speed. Endurance was determined by the changes in the need of persons running on a treadmill moving at a constant rate until refusal because of fatigue. The somewhat altered values of the post-rest period as compared with those of the pre-rest period were of a transitory nature and were rapidly restored to their original level. In experiments conducted after a 10-day bed rest, runners on a treadmill 2-3 days after the rest period were able to maintain a speed equal to that of the pre-rest period. Despite the sharp decline in 1/2

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USSR

IOFFE, L. A., Teoriya i Praktika Fizicheskoy Kul'tury, Vol 34, No 8, 1971, pp 21-24

endurance following a 40-day bed rest, the level of endurance in trained athletes was found to be greater than that in untrained persons. Furthermore, with the resumption of regular training these athletes were soon able to equal their pre-rest records and in some cases even exceed them. It is thought that in the course of a passive rest period between training periods, different forms of fatigue accumulated as a result of irrationally organized training processes are lost. The experiments thus established that properly prescribed passive rest periods are helpful in increasing the efficacy of the training process. Further study to determine the optimum variants of limited mobility in different situations is urged.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

IOFFE, L.

> SO: IPPS 53388 17 Jew 91

UDC 612.766.2.015.31

Abstract: The effect of a 5-day water impresson test (involving five young healthy male test subjects) on the state of mineral nombolium was investigated. An increase

differents (Toolly viter) and a change in uniony elec-trolyte exerction was observed. Variations in the renal function of water and ion excretion during the imperion exertives of variet and ion excretion during the imperion exertives of society to the planma and experiment witer in solium and potential correct in the planma and experiment water and the first to third days after the experiment water and lifety to third days after the experiment the brack correction and delayed. During the experiment the lifety control of a reduction in the volume of circu-lating planma, and accordingly, the blood concentration. Polluck, the impersor tool officient charges were noted to the heratostitic index in persons to a chandral load. Premanance of the observed changes are discussed.

In recent studies to has been denomatrated that restriction of motor ments with results in definite enames an understandal setabolism. In experiments with projected bell confinement and exposure in an immerced state there also found to be primarily a decrease to intravascular volume (Gravaline, et al., Exerts, et al., Vett, Vett, Preferd, et al., and others). The predominance of eliminated fluid ever the consumed quantity is accompanied by increased exertion of sittingen, phosphorus, calcium, patamatem and sodium (Fr. N. Hirryukov, et al.; Forkert,

Horever, it is known that the electrolyte balance exerts a direct of the functional state of the cardiovacular system. Accordingly, it becames clear vily so much interest is being above in counges in biochemical

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

USSR

UDC: 550.837

IOFFE, L. M., KOMAROV, V. A., All-Union Scientific Research Institute of Surveying Procedures and Techniques

"A Method of Geoelectric Prospecting"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrastsy, Tovarnyye Znaki, No 19, 1970, Author's Certificate No 272447, filed 9 Aug 68, p 62

Abstract: This author's certificate introduces a method of geoelectric prospecting based on measuring nonlinear effects with simultaneous excitation of a primary field by currents of two frequencies (carrier and modulator frequencies). As a distinguishing feature of the patent, the procedure is designed to improve measurement accuracy and to distinguish ore deposits by minoralogical composition. The primary field is excited by alternating currents of rectangular form which are stabilized with respect to amplitude, and the ratio of the amplitude of the modulation signal envelope to the amplitude of the carrier frequency signal is measured, as is the phase shift between the envelope of the modulation signal and the signal of modulating frequency of the exciting field. These measurements are used to determine the presence and mineral composition of ore deposits.

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AA0052390

Soviet Inventions Illustrated, Section III Mechanical and General,

243430 SHIP'S TRANSMISSION comprising hydromechanical reversible reduction gear, with planetary stage, central gear train, reverse gear train, distributor and hydraulic clutch, differing in that the planetary stage has a brown, the pole of which is the driven link of the reduction gear. The sunwheel is connected to the central gear train, one gear of which is in contact with the forward and reverse wheels of the separator shaft respectively via the forward and reverse hydraulic clutch. A gear of the reverse gear train is connected to the reverse wheel of the distributor gear train, the central gear of which, being engaged simultaneously with the forward and reverse wheels of this train, serves as the driving link of the reduction gear. This enables fuller use to be made of the engine's power in reverse. In order to improve the coeff. of useful work of the installation during prolonged forward motion, the forward wheel of the distributor gear train is connected to a gear of the central gear train via a separating cam clutch.

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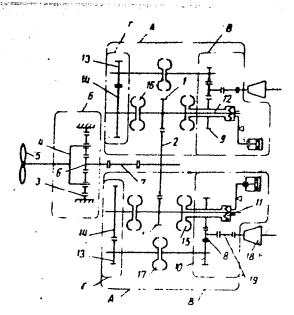
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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"



Ioffe, L. Ya.; Komarova, L. K.; Pyzh, O. A.; Rodin, A. S.



14.8.67 as 1181577/27-11.IOFFE L.YA.et al.(11.9.69) Bul 16/5.5.69. Class 65f. Int.Cl.B 63j.

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the laugth of long distance channels used for its transmission it is expedient to change ever to an automated system of control and backloges;

With the continuously increasing volume of radio broadcasting and

of a system for an automatic monitoring of the technical indices of the the first steps in solving the problem of automation was the development with this system reducing the unproductive lesses to a advisor. The re-

An analysis of the operation of the channels showed that in sider

Science in Te Control

IOFFF, M.G.

to obtain continuous objective information on the technical annels is a long distance broadcast chamiels (MAV). and continuity factor of a channel, the noise level, the coefficient of the quality of the passage of programs over the channels: transmission deviations from the standard of the following parameters which determine the broadcast network the automatio-montroring devices main recent the

SYSTEM FOR APPOMATIC MANIFORMAC OF TRUBBLE AND THE OF THE DISTANCE BROADCAST CHANNELS late Bear Brown we

[Article by Yu. V. Paleyin, sendom unking of the school its type of institute of red to a fulfact which replaced become to the configuration of the USER Ministry of Communications: Wescar, tectoric results and the Russian, No II, November 1972, pp 25-28]

improvement in the management of the national cornery." In the field of communications one of the most important tacks is to provide automatic (operating and accurate) monitoring broadcast channels (HKV). The saving from putting into operation such a system on the network of channels of the Directives of the 24th Party Congress specify: "to continue rubles a year. class-1 quality will amount for the country to about 150,000 of the continuity and technical indices of long distance

CIA-RDP86-00513R002201110019-4" APPROVED FOR RELEASE: 08/09/2001

USSR

UDC 681.327.11

ANTONOVA, T. N., BABKIN, V. YA., IOFFE, M. G., KOSHEVOY, L. L., SHLYAKHTER, D. M.

"A Device for Recording Information"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 23, 1970, Author's Certificate No 276514, Filed 18 Mar 69, p 137

Abstract: This author's certificate introduces a device for recording information and contains memory units, distributors, a master oscillator, an electronic clock, a control module, a printout and logic circuits. As a distinguishing feature of the patent, speed is increased and reliability is improved by introducing an inhibitor connected between the master oscillator and the distributor counter. One of the inputs of this counter is connected to the outputs of the flip-flops in the cells of the memory units, while its other input is connected through an OR gate to the outputs of the coincidence circuits of these cells. Also incorporated in the device is a printout control module which contains a coincidence whose inputs are connected to the outputs of the coincidence circuits in the memory units and to one of the inputs of the coincidence circuits of the control module. A flip-flop is also added with its input connected to the output of the coincidence circuit

USSR

ANTONOVA, T. N., et al., Otkrytiva, Izobreteniya, Promyshlennyve Obraztsy, Tovarnyye Znaki, No 23, 1970, Author's Certificate No 276514, Filed 18 Mar 69, p 137

and its output connected to one of the inputs of the other coincidence circuits in the control module, which are connected through OR circuits to the output amplifiers.

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USSR

UDC 8.74

IOFFE, M. I.

"A Procedure for Constructing a Diagnostic Dictionary for Combination Circuits"

Tr. In-ta elektron. upravl. mashin (Works of the Institute of Electronic Control Machines), 1971, vyp. 18, pp 59-65 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V415)

Translation: A procedure is described for constructing a diagnostic dictionary for combination circuits. The diagnostic dictionary is a table the columns in which correspond to each of the possible failures (the failure can be both single and multiple) and the rows, to the monitoring programs constituting the tests of the investigated device. In the table at the intersection of row i and column j there is a 1 or 0 depending on whether the program i permits detection of the failure j or not. If when running through the test a 1 is used to mark the incorrectly executed monitoring program and a 0, the correctly executed one, then after running through the test the binary number obtained permits diagnosis of the failure using the diagnostic table. For this purpose the binary number obtained is compared with the columns of the diagnostic table. The comparison indicates that there is a failure in the device corresponding to the column; lack of comparison means there is a failure not considered when compiling the table. A study was made of two procedures permitting a significant increase in 1/2

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IOFFE, M. I., Tr. In-ta elektron. upravl. mashin, 1971, vyp. 18, pp 59-65

accuracy of diagnosing failures by the results of a time test of the combination circuit. An example is presented of constructing the diagnostic dictionary for the combination circuit comprising 6 ranks. It is noted that the program realizing the construction of the diagnostic dictionary on the basis of the presented rules was written in the machine code of the BESM-4 computer and is a component part of the programs for constructing the combination circuit tests.

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USSR

UDC 8.74

IOFFE, P. D., TOPORISHCHEVA, S. A., KARMAKOV, T. N., KHERUVIMOVA, L. P.

"Programming System Based on the LS Language"

Tr. N.-i. i proyekt. in-ta mekhaniz. i avtomatiz. upr. proiz-vom v avtomob. promsti (Works of the Scientific Research and Planning and Design Institute of Mechanization and Automation of Production Control in the Motor Vehicle Industry), 1971, vyp. 2, 139-143 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V596)

Translation: A programming system is described which was created on the basis of the LS algorithmic language. The basic succession of development of the system is discussed. A brief description is presented of the composition and structure of the system, the types of operations performed by it, and the sequence in which the operations are performed during its operating process.

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UDC: 621-752:621.225

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IOFFE, R. L., PANCHENKO, V. I. (Moscow)

"Investigation of the Influence of the Number of Impeller Blades of Hydrodynemic Machines Upon Their Vibroacoustic Characteristics"

Moscow, Mashinovedeniye, No 1, Jan-Feb 72, pp 20-24

Abstract: Oscillations at blade frequencies and their higher harmonics, originating in hydrodynamic and some other machines of the blade type, are manifested in the apectral composition of vibroscoustic fields emaily in the form of clearly expressed discrete components. Experimental research conducted in connection with nonsteady processes in such machines makes it possible to evaluate, in a first approximation, the character of flow of the working floid at the exit from the pump impeller, and makes it possible to adopt for subsequent consideration, in linear formulation, the relationship of the lift force P on the blade of the guiding machanism to time. A contribugal perp, in which the oscillations with blade frequency have a wave length considerably greater than the geometric directions of the pump is also considerably finite number of blades in the guiding machanism, puriodic towers act spon the body of the contributed parm, these pariodic forces being broacht to an excitation target and a transverse force which cause vibrations and makes 1/2

UESR

IOFFE, R. L., PANCHEIRO, V. I., Mashinovedeniya, No 1, Jan-Peb 72, IP 20-24

the pump. The article deals with the influence of the blade number of the pump impeller and of the guiding mechanism upon the character and intensity of excitation of oscillations at blade frequency, which originate in the structural elements of hydraulic machines. Relationships are obtained, which make it possible by selecting the appropriate number of blades, to provide winimal values of total exciting transverse forces and moments. Three figures, one table, seven references.

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USSR UDC 547.26'118

MATROSOV, Ye. I., IOFFE, S. T., and KABACHNIK, M. I., Institute of Metal Organic Compounds, Academy of Sciences USSR

"IR Spectra and Hydrogen Bonding in Substituted Esters of Formylmethyl-phosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2625-2630

Abstract: Substituted esters of formylmethylphosphonic acids are excellent subjects for the study of hydrogen bonding since they enolize forming compounds with a hydroxymethylene group capable of intra- and intermolecular H-bonding. IR spectra of esters of the type (EtO)₂P(0)CH(CHO)R, where R = C1, Br, Ph or CN have been investigated in solid state and in several solutions with varying concentration of the substrate. In the solid state all are in trans-enolic form with strong intermolecular hydrogen bonding, as reflected by intensive infrared absorption bands at 2700 and 3050-2950 cm⁻¹. In solution an equilibrium exists of all of the tautometic forms: aldo-, trans-, and cis-enolic forms. The equilibrium shifts, depending on the solvent, on the degree of dilution and on the type of substituent. No absorption maxima were observed indicating the presence of free OH groups.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

1/2 019 UNCLASSIFIED PROCESSING DATE--160CT70
TITLE--GROWING BETA EUCRYPTITE AND BETA AND GAMMA SPODUMENE SINGLE

AUTHOR-(02)-IOFFE, V.A., ZONN, Z.N.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 397-8

DATE PUBLISHED---- 70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, PHYSICS

TOPIC TAGS--SINGLE CRYSTAL, MINERAL, CRYSTAL GROWING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1995/0911

STEP NO--UR/0070/70/015/002/0397/0398

CIRC ACCESSION NO--APO116421

UNCLASSIFIED

CIRC ACCESSION NO--APOLI6421

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. EUCRYPTITE SINGLE CRYSTALS WERE GROWN IN PT CRUCIBLES BY CRYSTN. FROM A SULN. IN A FLUX MELT WHILE LOWERING THE TEMP. FROM 1200 TO 700DEGREES AT A RAIE OF 2-5 DEGREES-HR. THE EUCRYPTITE CRYSTALS WERE OBTAINED WITH A YIELD OF 90-95PERCENT IN THE FORM OF LARGE, TRANSPARENT, HEXAGONAL PYRAMIDS, 6-15 MM LONG ALONG THE C AXIS. THE WT. OF A SINGLE CRYSTAL WAS 0.6-0.8 G. LARGER AND MORE DEVELOPED CRYSTALS COULD BE OBTAINED WITH A SEED. THE CHEM. AND X RAY STRUCTURAL ANALYSES AGREE WITH LITERATURE DATA. BETA SPUDUMENE SINGLE CRYSTALS WERE GROWN FROM A FLUX MELT. THE ONSET OF CRYSTAL

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GROWTH WAS AT 1190-1195 DEGREES AS THE TEMP. WAS DECREASED FROM 1220 TO 800DEGREES AT 3-3.5 DEGREES-HR. THE TRANSPARENT CRYSTALS IN THE FORM OF REGULAR OCTAHEDRA WITH A TETRAGGNAL SYMMETRY WERE 6-8 MM LONG ALONG THE HEIGHT OF THE OCTAHEDRA. IF THE COOLING CONDITIONS WERE CHANGED TO A TRANSPARENT PYRAMIDS OR PRISMS. THE LENGTH ALONG THE C AXIS WAS 5-6 MM. THE COMPN. WAS 3.63 SIG SUB2.1.00AL SUB2 O SUB3. 1.00LI SUB2 O (WT. PERCENT). A METHOD WAS DEVELOPED FOR GROWING THESE CRYSTALS WITH IMPURITIES OF FE PRIME3POSITIVE, NI PRIME2POSITIVE, CO PRIME2POSITIVE, CR PRIME3POSITIVE, TA, AND V. FACILITY: INST. KHIM. SILIKAT, LENINGRAD, USSR.

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1/2 023 UNCLASSIFIED

PROCESSING DATE--300CT70

TITLE--ESR SPECTRA OF MOD SUB3 SINGLE CRYSTALS DOPED WITH VANADIUM AND

AUTHOR-(03)-IOFFE, V.A., PATRINA, I.B., ZELENETSKAYA, E.V.

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VUL 37, NR 1, PP 425-432

DATE PUBLISHED----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--EPR SPECTRUM, MOLYBDENUM OXIDE, SINGLE CRYSTAL PROPERTY, CRYSTAL IMPURITY, VANADIUM, NIOBIUM, ELECTRON HOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1989/1078

STEP NU--GE/0030/70/037/001/0425/0432

CIRC ACCESSION NO--APO107587

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

2/2 023 UNCLASSIFIED PROCESSING DATE--300CT70 CIRC ACCESSION NO--AP0107587 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN MOO SUB3: V SINGLE CRYSTALS ESR SPECTRA OF V PRIME4 POSITIVE IONS AND ELECTRON HOLE CENTRES INTERACTING WITH V PRIMESI (I EQUALS SEVEN HALVES) ARE OBSERVED. THE RELATIVE INTENSITIES OF THE V PRIME4 POSITIVE IONS AND HOLE SIGNALS CHANGE WITH THE ATMOSPHERE OF CRYSTAL GROWTH. IN MOO SUB3: NB SINGLE CRYSTALS ELECTRON HOLE CENTRES INTERACTING WITH NB PRIME93 (I EQUALS NINE HALVES) NUCLEI ARE PRESENT: THE ELECTRONS ARE PARTLY LOCALIZED IN THE MOLYBDENUM SUBLATTICE. NB PRIME4 PUSITIVE IONS ARE ABSENT. SYMMETRY OF THE ELECTRON HOLE SPECTRA SHOWS THAT THE V PRIMESI NUCLEI ARE IN SUBSTITUTIONAL POSITIONS AND THE NB PRIME93 NUCLEI ARE IN INTERSTITIAL FACILITY: I. V. GREBENSHIKOV INSTITUTE OF SILICATE CHEMISTRY. FACILITY: ACADEMY OF SCIENCES OF THE USSR, LENINGRAD.

UNCLASSIFIED

USSR

UDC: 669:613.6

ZLOBINSKIY, B. M., IOFFE, V. G., ZLOBINSKIY, V. B.

"Flammability and Toxicity of Metals and Alloys"

Vosplamenyayemost' i Toksichnost' Metallov i Splavov, Metallurgiya Press, Moscow 1972, 264 pp.
Translation of Foreword: Metal is the basis of our economy. Millions of workers are involved in the production and processing of metals, and since metals have dangerous properties under certain conditions, which may cause a fire or explosion or may be toxic to the organism, the problem of assurance of production safety is particularly significant. Many metals and alloys can burn. Some oxidize rapidly tion temperature, while others oxidize slowly and the heat liberated is insufficient for combustion. Some metals, particularly magnesium, titanium, sodium, potassium, easy ignition and maintenance of combustion. Some metals, usually not considered flammable, do ignite and burn in the finely powdered state. Aerogels and aerosols of many metals may ignite or explode; destructive industrial explosions of metal

The effects of metals on workers have produced many occupational diseases. The interest in assurance of production safety has spawned an interest in the evaluation of the flammable and toxic properties of metals, their alloys and compounds. Studies in this area have been particularly intensive in recent years, with the progress of 1/7

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USSR

Zlobinskiy, B. M., Ioffe, V. G., Zlobinskiy, V. B., Vosplamenyayemost' i Toksichnost' Metallov i Splavov, Metallurgiya Press, Moscow, 1972, 264 pp.

nuclear and missile technology, powder metallurgy, pyrotechnics and other new branches of industry which utilize metals and various compounds of metals. Deeper studies of the combustion of metals have been required as metals are used in high development of nuclear power engineering and missile technology has required more complete explanation of the essence of the processes of high temperature oxidation, There is particular intervals and alloys.

There is particular interest in the study of metals as fuels. This possible use of metals was first suggested in connection with the problem of interplanetary travel by the Soviet scientists Yu. Kondratyuk (Zavoyevaniye Mezhplanetnykh Prostranst'v [Conquering Interplanetary Space], Novosibirsk, 1929) and F. Tsander (Problema Poleta Pri Pomoshchi Reakti'nykh Apparatov [The Problem of Flight Powered by Reaction Engines], ONTI Press, 1932). These studies have been broadly developed only quite aerosols have been studied. This study and production experience have accumulated a great deal of factual material and lead to valuable theoretical conclusions. The studies continue, since the data available are frequently contradictory, many questions remain unanswered, and certain metals and their alloys have not yet been

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USSR

Zlobinskiy, B. M., Ioffe, V. G., Zlobinskiy, V. B., Vosplamenyayemost' i Toksichnost' Metallov i Splavov, Metallurgiya Press, Moscow, 1972, 264 pp.

studied. Systematization of the accumulated data should help their practical use and the development of further studies in this area.

Section I of this monograph is dedicated to studies of the flammability of metals and alloys. Section II studies problems of the flammability of aerogels of of metals and alloys, while Section III studies problems of the flammability of aerosols of metals and alloys. Sections II and III discuss the studies, performed primarily at the Moscow Order of Fed Banner, Labor Institute of Steels and Alloys, based on the dissertation work performed under the leadership of B. V. Zlobinskiy on the flammability of binary metals and alloys, including the work of Candidate of Technical Sciences N. V. Manuyev (alloys of titanium with aluminum, manganese and silicon), of Candidate of Technical Sciences V. G. loffe (alloys of zirconium with titanium and titanium and aluminum), of Candidate of Technical Sciences Kh. I. Peyrik (alloys of nickel with aluminum with magnesium), of Candidate of Technical Sciences V. G. Poyarkov (alloys of magnesium with lithium and aluminum), of Candidate of Technical Sciences Ye. I. Popov (alloys of Mukhametov (alloys of copper with aluminum and silicon), and of B. S. Fedotova

The problem of assurance of production safety requires that the toxic properties of metals and alloys be studied as well. The dangerous properties of many

USSR
Zlobinskiy, B. M., Ioffe, V. G., Zlobinskiy, V. B., Vosplamenyayemost' i Toksichnost' Metallov i Splavov, Metallurgiya Press, Moscow, 1972, 264 pp.
metals have not yet been determined or studied sufficiently. Section IV studies general problems of the toxicity of metals and their compounds and presents the information which the engineer needs concerning the toxicity of metals and possible estimation of their danger. Section I of the book was written by Professor B. M. Zlobinskiy, Sections II and IIby B. M. Zlobinskiy and Candidate of Technical Sciences V. G. Ioffe, Section IV The authors are deeply grateful to Doctor of Technical Sciences, Professor V. I. Medical Sciences R. A. Kucherskiy, who reviewed the manuscript and made valuable suggestions.
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Flammability of Metals and Alloys
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Zlobinskiy, B. M., Ioffe, V. G., Zlobinskiy, V. B., Vo Metallov i Splavov, Metallurgiya Press, Moscow, 1972, time. Influence of powder production technology. powder moisture content and composition of surroun Chapter 4. Determination of Ignition Energy. Chapter 5. Flammability of Mechanical Mixtures of Meta Chapter 6. Flammability Diagrams. Chapter 7. Mechanism of Ignition and Combustion of Meta Bibliography Section III	Influence of ding medium.
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USSR

UDC 621.762.004.2

IOFFE V. G.

"Interrelationship Between Characteristics of Flammability of Metal Powders"

Problemy inzhenernoy okhrany truda [Problems of Engineering Protection of Labor], (Moscow Institute of Steels and Alloys, 63), Moscow, 1970, pp. 11-19, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No.1 G504 by the author).

Translation: Statistical processing of experimental data is used to produce correlation equations for the minimum concentration limit for flammability L at the ignition temperature for systems of binary alloys, allowing the values of L to be determined with good accuracy from the known value of t. 5 figures; 2 tables; 6 biblio. refs.

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USSR

VDC 548.5:531.717

IOFFE. Ya. I., SMUSHKOV, I. V., and SHERMAN, Yu. I., All-Union Scientific

"Device for Measuring the Diameter of Single Crystals During Growing"

Moscow, Zavodskaya Laboratoriya, No 2, 1971, pp 239-240

Abstract: A device developed at the All-Union Scientific Research Institute of Single Crystals for measuring the diameter of single crystals during growing is described. The measuring technique, based on photographic recording of the dislocation of a bright edge on the side of the crystal opposite the illuminated side, is discussed with reference to the optical diagram of the photorecorder. Whereas the generally used visual measuring method has an accuracy which does not exceed + 10 mm, the present method

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THERMOGRATALYTIC CRACKING OF MAZUTS -UAUTHOR-(03)-ALIYEV, V.S., ALTMAN, N.B., IGFIN, G.A.

COUNTRY OF INFO--USSR

SCURCE-NEFTEPERERAE, NEFTERHIM. (MOSCOW) 1970, (6), 37-8

DATE PULLISHED ---- 70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYMERIZATION, PETROLEUM PRODUCT, FLUIDIZED BED, PYROLYSIS, CATALYTIC CRACKING

CENTROL MARKING--NO RESTRICTIONS

DGCUMENT CLASS--UNCLASSIFIED
PRDXY FICHE NO---F070/C05060/C03 STEP NO--UR/0313/70/000/006/0037/C038

CIRC ACCESSION NO--APO144346
UMCLASSIFIED

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IOFIS, N.A

25(1)

\$/019/60/000/05/281/350 D033/D006

AUTHOR:

Lofis, N.A.

TITLES

Method of Soldering Ceramic to Ceramic and Glass to Metal

PERIODICAL:

Byulleten; izobreteniy, 1960, Nr 5, p 60 (USSR)

ABSTRACT:

Class 49h, 25. Nr 126728 (611448/25 of 11 November 1958). The soldering process is carried out with the heating of the joint to be soldered. To ensure a strong joint, direct current is passed through the joint during the soldering process.

Card 1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

I.A.

25(2)

S/019/59/000/20/280/331

D046/D006

AUTHOR:

Iofis, N.A.

TITLE:

A Device for Obtaining High Pressures

PERIODICAL:

Byulleten' izobreteniy, 1959, Nr 20, p 67 (USSR)

ABSTRACT:

Class 58a, 2. Nr 123409 (605987/25 of 14 August 1958). The device consists of a cylinder with a conical piston or plunger, and of a working chamber located underneath a conical boring inside the cylinder, into which the plunger goes. To obtain a firm seal between the walls of the conical bore and the plunger, the latter is made of a ductile

material, e.g. of lead.

Card 1/1

9(6)

SCV/19-59-1-37/101

AUTHOR:

Tofis H. i.

TITLE:

A Gas Absorber for Electro-Vacuum Imptiuments.

PERIODICAL: Byulleten' izobreteniy, 1959, Nr 1, p 26 (7302)

ABSTRACT:

Class 21g, 13₅₁. Nr 117226 (576312/a-7027 of 22 February 1955). Submitted to the Linicary of the Radio Engineering Industry of the USSR. It gas absorber for electro-vacuum instruments including a filter, a heater and a gas-absorbing substance. The absorbing substance is inclosed in a mobal casing being heated during the spraying. The work outlet hole of the casing is closed by a grid (filter)

of ceramic mass. The purpose of the design is to improve the vibration resistance.

Card 1/1

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USSR

UDC: 621.396.6:621.315.5(088.8)

IOFIS, N. A., TROYAN, M. V.

"An Iron-Based Alloy"

USSR Author's Certificate No 254787, Filed 4 Jul 68, Published 9 Mar 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V404 P)

Translation: This Author's Certificate introduces an iron-based alloy which contains nickel. As a distinguishing feature of the patent, the mechanical and physical properties of the alloy are improved by adding rhenium and using the following percent composition: nickel--38-39, rhenium--9.5-10, the remainder iron. Resume.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

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UDO 621.585.032.21 (085.8)

MEYERSON, G.A., LOPIS N.A. NUREHKHAMEDOV, V.KH., SOLOVEYCHIK, A.I.

"Material For Cathodes"

USSR Author's Certificate No 299867, filed 2 Oct 68, published 7 June 71 (from RZh: lektronika i yeye primeneniye, No 1, Jan 72, Abstract No 1A87P)

Translation: According to the invention, the cathode material differs from well-known materials in the fact that it consists of a solid solution of borides of rare earth and alkali-earth metals in which the borides in question. are taken in the ratio: boride of rare-earth metal, from 60 to 95 molar percent; boride of alkali-earth metal, from 5 to 40 molar percent. The solid solutions of rare-earth and alkali-earth metals have smaller vapor pressures then separated borides and therefore evaporate more slowly than separated borides and consequently also their mixture. With a solution of a boride of an alkaliearth metal, e.g., BaB6 in a boride of a rare-earth metal, e.g., LaB6, in the solid solution which is formed a metallic type of conduction remains, the emissive properties of which are better than in a boride of rare-earth metal. A reduction of the work function with LaB6 because of the diffusion of EaB6 into LeB6 is accounted for by the fact that at the cathode surface a monatomic film is produced of the more active motal Ba, the work function of which is lower than with Lu. Tests of the emissive properties of the solid solutions showed that during operation of the cathode at 1400-1550° C the current

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USSR

MEYERSON, G. A. et al, USSR Author's Certificate No 299887

density of the emission for a composition containing 40 molar percent BaB the residual LaB6 is twice as high and for a composition with 30 molar percent BaB6 the residual LaB6 is 1.5 times as high as with the same conditions for pure LaB6. A.F.

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USSR

IOGANZEN B. C.

"Plenary Session of the Scientific Council on the Problems of Hydrobiology, Ichthyology and the Use of Biological Resources of Bodies of Water, Plenary Session of the Ichthyological Commission and Meeting of the Central Council of the All-Union Hydrobiological Society"

Moscow, Voprosy Ikhtiologii, Vol 12, No 4 (75), 1972, pp 802-805

Abstract: A review is presented of reports given on 1-4 February 1972 in Moscow at the Plenary Session of the Scientific Council of the USSR Academy of Sciences on the problems of hydrobiology, ichthyology and utilization of biological resources of bodies of water, the plenary sessions of the Ichthyological Commission of the USSR Ministry of the Fishing Industry and the Meeting of the Central Council of the All-Union Hydrobiological Society of the USSR Academy of Sciences. At the First Plenary Session of the Scientific Council, a report on the activity of the council in 1971 and the work plan for 1972 were discussed. Work has been done in the discovery of the laws of formation of biological productivity of marine and continental bodies of water, the biological grounds for the methods of increasing the productivity of fish in inland bodies of water and insuring a raw materials base for the fishing industry in the seas and oceans and the biological aspects of the problem of "pure water." Publications of the council in 1971 are listed. A report on the content, structure and 1/2 - 26 -

USSR

IOGANZEN, B. G., Voprosy Ikhtiologii, Vol 12, No 4 (75), 1972, pp 802-805

problems of hydrobiology given at the Second Plenary Session of the Scientific Council outlines the goals of hydrobiology. The organizational work of the Ichthyological Commission is discussed. The protection and preservation of nature and natural resources was a continuing theme throughout the meetings. Some recommendations along these lines are listed.

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USSR UDC 619:616.9-022.7+636.2+636.3+636.4+636.52/.58

ISLAMOV, R. Z.; IOGANSON, T. N.; KOLOMAKIN, G. A.

"Dogs as Possible Sources of Brucellosis on Swine-Breeding Farms"

Tr. In-ta Krayev. patol. KazSSR (Works of Institute of Regional Pathology of the Kazakh SSR, No 20, 1970, pp 17-20 (from RZh-58. Zhivotnovodstvo i Veterinariya, No 4, Apr 71, Abstract No 4.58.632)

Translation: Epizootiological analysis of a swine-breeding establishment threatened with brucellosis was performed. It was concluded that at such a focus, dogs might be contaminated with Br. suis and apparently can transmit the latter to susceptible sows.

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IOGANZEN, B. G.

"Plenary Meeting of the Scientific Council for Hydrobiology, Ichthyology, and Biological Resources of Bodies of Water"

Moscow, Voprosy Ikhtiologii, No 4, 1971, pp 756-758

Abstract: A plenary meeting of the Scientific Council of the USSR Academy of Sciences for Hydrobiology, Ichthyology, and Exploitation of Biological Resources of Bodies of Water, a plentary meeting of the Ichthyological Commission of the USSR Ministry of Fisheries, and session of the Central Council of the All Union Society of Hydrobiologists were held in Moscow from 2 to 5 February 1971. Papers were read on the accomplishments of the past year, on the research objectives for the coming year, especially in conjunction with the Ninth Five-Year Plan, and on some theoretical

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NECIFIC IMPERITY TO SMELL POINS OF GARLA MARKSIS) NOOS AFTER 2-4-VEAR EXPOSURE (TOKNOLOGICAL AND FEARSONT-COMPHICAL ANALYSIS)

Calmitte consisting the cumulative domage of which, according to vestimates, could consiste to [n-100 res [rosutgen equivalent man] over a one-vest illight and soute recurrent exposure to solar copuscular irradiation in a factory of 5-50 rem bursts (V.C. bobicou et al.; Schaefer) are factors that are continuously present shirts prolonged space (Lighes, The proposite of and second and authoritation of levels of perfectives for commonants during prolonged space (Lighes, Georgia et al.) rather complex problem. The rechamisms of onset of radiation stekness after exposure to rela-tively large laws of ionizing radiation have been studied in numerous investi-pations. There are many works dealing with impundantly reactivity under such conditions, and they have been summarized in monographs and extrools (B.V. Extravel N.S. Elerpanskers of all, W.L. Trottsky et al., and others). Yet the chamics in impundantly investives in the organism referable to exposure to every home of ionizing radiation have not been travettysted sufficiently.

It has need demanstrated that 4-7 months after fractional or continuous exposure to 1.5-1.5 rem daily there is a significant decrease in immunity to intestions (P.N. Sientev and P.A. butfatt D.K. Manien; E.K. Dibititize).

In the present investigations, some manifestations of specific immunity were analyzed during a unique complex chronic experiment. A large group of does has been continuously exposed to germa rays (cobalt continuously exposed to germa rays (cobalt continuously series). For the first three years of the experience the animals series behaved to radiation such as could be principle for the even of a spacecraft during a filter from the cartis to Mars and back to earth, provided the radiation continuous and the cartist to Mars and back to earth, provided the radiation continuous and the radiation of the principle ["caim"] (MarG. cripgelyev et al.)

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Aerosols

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WDC 543.84:(546.42+546.641):541.182.2/3

YUSHKAN, YE. I., ROVINSKIY, F. YA., STUKIN, YE. D., IOKHEL SON, S. B., and

"Express Method for the Determination of 90 Sr, 89 Sr, and 91 Y in Aerosol Samples"

Leningrad, Radiokhimiya, Vol 13, No 6, 1971, pp 872-875

Abstract: A rapid mathod for concurrent determination of Sr, Sr, and 91 y has been developed. Aerosol samples collected on filters are combusted at 500 and treated repeatedly first with a mixture of hydrofluoric acid and nitric acid, then with concentrated HNO₃. Dry residue is dissolved in 1 M HCl, strontium and yttrium carriers are added, and strontium sulfates are precipitated by addition of a 5% H₂SO₁, solution followed by alcohol. The precipitate is separated by centrifugation and redissolved in 10% ammoniacal solution of trilone B. Yttrium remains in original mother liquor. From this step both attributes are processed concurrently. To separate strontium it is converted to a carbonate salt, redissolved, Fe(NO₃)₃ is added to precipitate Fe(OH)₃ and strontium finally converted again to the carbonate, its activity is counted on hydroxide, redissolved to remove possible accompanying impurities of Ce and Sr

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

YUSHKAN, YE. I., et al., Radiokhimiya, Vol 13, No 6, 1971, pp 872-875

by precipitating them as sulfates, and yttrium is finally reprecipitated as a hydroxide, converted to an oxalate and its activity is counted on a \beta-spectro-spectr

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Adoption of Continuous Steel Casting Into 175X1020 mm Sheet Bars Characteristics of Continuous Into 200X1500 mm Sheet Bars	33 40
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UDC 518:517.91/.94

YURGENSON, R., and IOKK, Kh.

"Solving Boundary Value Problems of a Second-Order System of Differential Equations by the Finite-Difference Method"

<u>Uch. zap. Tartus. un-ta</u> (Scientific Notes of Tartu University), No 253, 1970, pp 276-286 (from <u>Referativnyy Zhurnal -- Matematika</u>, No 7, July 71, Abstract No 7B936, by I. Shelikhova)

Translation: Using the finite-difference method, the authors solve boundary value problems for systems of linear and nonlinear, ordinary second-order differential equations for two types of approximation of boundary conditions. A priori evaluations of the solutions of linear systems are made. In the nonlinear case two methods of approximating the initial system are considered. Iterative processes are formulated for solving nonlinear difference systems, and the conditions for their convergence are proven. The rate of convergence of solutions of difference boundary value problems to the solution of the initial nonlinear boundary value problem is investigated, and evaluations are made for the errors under the finite-difference method.

- 7 -

572 014 TITLE--POSSIBILITY OF AN ANOMALOUS TEMPERATURE DEPENDENCE OF THE MEAN PROCESSING DATE--11SEP70 SQUARE OF THE DISPLACEMENT AND VELOCITY OF CE PRIMES POSITIVE IONS IN AUTHOR-IDLINS, YE.

COUNTRY OF INFO--USSR

SOURCE--PHYS. LETT. A 1970, 31(3), 105-6

DATE PUBLISHED----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CERIUM, MOSSABUER FFFECT, HELIUM, SULFATE, TEMPERATURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1989/1730

STEP NO--NE/0000/70/031/003/0105/0106

CIRC ACCESSION NO--APOIO8097 2222222222

UNCLASSIFIED

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UDC 612.898:612.178

IONAVICHUTE, V. I., SAMONINA, G. Ye., and UDEL'NOV, M. G., Chair of Human and Animal Physiology, Moscow State University

"Localization and Structural and Functional Organization of the Vagus Nerve Nuclei That Form the "Heart Center" of the Medulla Oblongata"

Moscow, Uspekhi Fiziologicheskikh Nauk, No 2, 1972, pp 3-23

Abstract: The article critically reviews the literature and results of the authors' own studies on the distribution of efferent and intercalary neurons in the complex of vagal nuclei (dorsal nucleus, nucleus of the solitary tract, ambiguous nucleus). It discusses the participation of the reticular formation in the central regulatory mechanism of the heart. It also presents morphological and physiological data on the cell composition of the afferent and efferent nuclei and on the distribution of the neurons that constitute the initial portion of the effector pathways of the heart. The article concludes with some ideas on the structural and functional organization of the "heart center" and assumptions as to its relationships with other CNS structures responsible for the overall regulation of the cardiovascular system.

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UDC 621.039.562:62-522

IONAYTIS, R. R., STOBETSKIY, V. N.

"Hydraulics of the Control and Safety System of Nuclear Reactors"

Gidravlika SUZ yadernykh reaktorov (cf. English above), Moscow, Atomizdat, 1972, 188 pp, ill., 1 r., 20 kop. (from RZh-50. Yadernyye reaktory, No 11, Nov 72, Abstract No 11.50.59 K)

Translation: This book is a first attempt to present problems of the hydraulics of control and safety systems of nuclear reactors. Diagrams of hydraulic systems, devices, mechanisms and the results of experimental studies are discussed along with a calculation and a rational patterning of the flow chart of hydraulic elements. Various cases of the motion of the rods in the safety and control system, calculation techniques are given, and the results of specially compiled experimental studies of individual hydraulic devices, systems, and drives of safety and control systems are given. 47 ill., 2 tables, 246 ref.

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UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

WELDING TRACTOR corrects the position of the electrode 19 relative to weld 20 at the same time as steering wheels 4 are directed into a new position because the electrode holder is directly attached to a toothed rack 9 which actuates through a quadrant 14 and a linkage, the front steering wheels. 31.5.67. as 1161173/25-27. S.M GOLOSHCHAPOV et al. (4.7.69.) Bul.9/20.2.69. Class 21h. Int.Cl. B23k,

Goloshchapov, S. M.; Ionchenkov, V. A.; and AUTHORS:

Rubin. A. Ya.

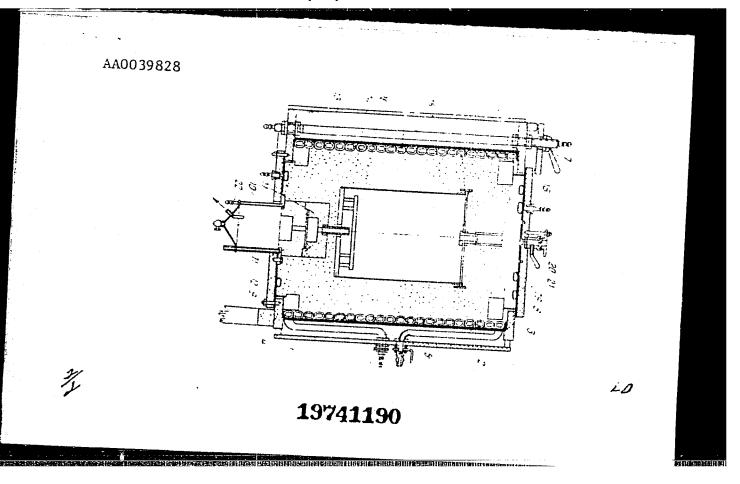
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WC 541.183:651.183.6

VLASOVA, O. A., TORE, K. C., KARAKCHIYEV, L. G., and PLYASOVA, L. II., Institute of Catalysis, Siberian Department, Academy of Sciences SSSR

"Influence of Nachining on Grain Size and Crystalline Structure of Type NaY Zeolites"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 534-536

Abstract: The possible change in the size of the zeolite particles with mechanical working was studied, as was the effect of the intensity of mechanical grinding on the grain size and crystal structure of the mechanica. An original sample and samples ground for 1, 2, 3, and 4 hours were studied. The curface area, as determined by the BET method using argon, decreased from 620 m²/g for the unground sample. NaY, to 40 m²/g for the sample ground for 4 hours, RaY-4. The surface areas calculated from electron micrograph data show an increase from 2.3 for hay to 16.5 m²/g for NaY-4. The latter was calculated from the equation $S = 6/\rho d$ where ρ is the density of the modifie, equal to $2 g/cm^2$; d in the average radius of the particles, obtained from a radius distribution curve. The radius decreased from 1.3 for hay to 0.18 /4 for NaY-4. In x-ray studies the very marked fine structure exhibited by hay was

VLASOVA, O. A., et al., Isvestiya Akademii Hauk SSSR, Serdya Khisicheskaya, No 3, 1972, pp 534-536

much reduced for the sample ground for 1 hour, NaY-1, and absent for Na-4. The total intensity was also much reduced, indicating decreasing crystallinity with increasing grinding time. The IR spectrum of NaY-4 between 1400 cm-1 and 300 cm-1 was much smoother and showed much greater absorption than that for NaY, although the peak positions were similar for all the spectra. The data obtained indicate that grinding induces changes in the crystal structure and adsorption capacity of NaY type zeolites.

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- 16 -

UNCEASSIFIED TO STATE OF BATE-2799V70 TITLE--DETERMINATION OF THE DIFFUSION COEFFICIENT IN POROUS CATALYSTS OF A DELAY TIME TECHNIQUE IN THE ABSENCE OF PRESSURE DROP -U-AUTHOR-(03)-GRACHEV, G.A., IONE, K.G., BAPSHEY, A.A.

COUNTRY OF INFO--USSE

SOURCE--KINET. KATAL. 1970, 11(2), 541-3

DATE PUBLISHED----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DIFFUSION COEFFICIENT, CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3008/0882

STEP NO--UR/0195/70/011/002/0541/0543

CIRC ACCESSION NO--APO137910 UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--APO137910
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DESCRIBED FOR DETN. OF
DIFFUSION COEFF. (D) IN STATIONARY AS WELL AS IN NONSTATIONARY SYSTEMS
BY MEASURING COUNTER DIFFUSIONAL FLOWS IN A CATALYST TABLET. THE METHOD
INVOLVES THE CONVENTIONAL TIME DELAY TECHNIQUE AND THE THEORIES OF WICKE
HOLLENCACN (1941) AND TIMOFEEV (1962). FACILITY: INST. KATAL.,
NOVOSIBIRSK, USSR.

UMCLASSIFIED

USSR UDC: 51

IONESKU, K., IORDAKE, V., MOYNYAGU, K., POSTELNIKU VIORIKA, SHATTELES, T.

"Statistical Methods of Investigation of Correlations in Economics"

Statisticheskiye Metody Issledovaniya Korrelyatsiy v Ekonomike [English version above], Moscow, Statistika Press, 1972, 160 pp (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V442)

Translation: Chapter 1. Statistical methods of expressing the dependence between economic phenomena. Chapter II. Methods of checking the existence of statistical connections. Chapter III. The correlation method. Chapter IV. Factorial analysis. Chapter V. Statistical Analysis of interrelated dynamic systems. Chapter VI. Production functions. Chapter VII. Productivity of labor in models of interconnected processes.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

USSIL

UDC 539.173.8:546.791

GVOZDYV, B. A., GYAD, YE., ICHESKU, S., SABEU, K., and SYTATOOL, S.

"Radiochemical Investigation of the Fission Products of Uranium Traciated by Accelerated Argon Ions"

Leningrad, Ladioknimiya, Vol 12, Lo 4, 1970, pp 612-617

Abstract: The authors determined the yields of various product of Mis. 1cm of a nucleus with Z = 110 from the envited state formed as a result of interaction of uranium-238 with argon-40 (U²³⁸+Ar-110-f). An attempt was also made to evaluate certain characteristics of the fission process for this case. Uranium was irradiated on the inner beam of a multiple-charge ion cyclotron at the Joint Institute of Nuclear Research. The target was U₂0₈ on an aluminum substrate. Pembardment with Ar⁷⁺ ions at 270 Mev varied from 5 to 12 hours. After irradiation the target was dissolved in nitric acid containing carriers of Ag. Te. Ba. Ia. To and Au. The solution was then treated sequentially to extract the silver, barium, rare earth elements, gold and tellurium. The chemical yield of the elements was determined by weighing or spectrophotometry, and the results were used to calcualte mass yields of the fission products. It was found that the experimental data conform satisfactorily to Gaussian distribution. The half-peak width of this distribution is approximately 60 mass units. The maximum fission product yield is estimated at approximately 1/2

USSR"

GVOZDEV, E. A., et al., Radiokhimiya, Vol 12, No 4, 1970, pp 612-617

20 mb. A comparison of the results with the mass distribution of uranium fission products yielded by irradiation with neon ions shows a somewhat wider mass distribution for argon than for neon. In conclusion the authors thank G. N. FLEROV for formulating the problem, I. ZVARE and YU. TS. OGANESYAN for constructive discussion of the results, and also Z. SHEGLOVSKIY and I. I. CHUEURKOVA for assistance in carrying out the experiments.

2/2

KUZ'MIN, G., and IONESYAN, A.

"Two Seminars on the Sanitation of Livestock Farms Affected With Tuberculosis and Brucellosis"

Moscow, Veterinariya, No 10, 1971, pp 122-124

Abstract: The RSFSR Ministry of Agriculture sponsored two seminars for scientists and practical workers in July, 1971 in the cities of Barnaul and Ul'yanovsk. The principal speaker was L. L. Verteletskiy of the RSFSR Ministry of Agriculture, who analyzed the epizootic situation in various parts fo the RSFSR and summarized the accomplishments of veterinary organizations and specialists during the past 10 years in organizing and carrying out measures to control tuberculosis and brucellosis. He also discussed the requirements for sound organization of efforts to protect farms against infectious diseases, brucellosis and tuberculosis in particular, and the common shortcomings in this respect. Professors Y. S. Orlov and V. YE. Shurevskiy of the All-Union Institute of Experimental Veterinary Medicine lectured on the principal methods of eradicating brucellosis and tuberculosis.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

UDC: 621.375.82 USSR

IONIN, A. A., MALYSHEV, V. I., and MASALOV; A. V.

"Increasing the Degree of Self-Synchronization of the Modes in a Neodymium Glass Laser"

Kratkiye soobshch. po fiz. (Brief Communications in Physics) No 8, 1972, pp 61-66 (from RZh--Fizika, No 4, 1973, Abstract No 4D1209)

Translation: An investigation is made into the characteristics of the radiation of two coupled neodymium glass lasers with a passive gate. The radiation in one laser is developed from the partially synchronized radiation of the other. A schematic of the equipment is given. The necessary conditions for effective self-synchronization of the modes (SM) in the controlled laser are indicated. By choosing the amount of coupling, the authors succeeded in obtaining an increase in the degree of SM (the percentage modulation of the controlled laser's radiated pulse increased to 100% and the radiation spectrum was markedly broadened). The experimental results agree closely with values for the oscillation development time. Bibliography of 10. I. O. S.

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CIA-RDP86-00513R002201110019-4"

APPROVED FOR RELEASE: 08/09/2001

USSR

UDC 612.119(99)

TASHPULATOV, R. Yu., RODINA, R. I., IONIN, A. I., and PONOMAREVA, N. G., Institute of Epidemiology and Microbiology imeni Gamaleya, Central Institute of Hematology and Blood Transfusion, and Arctic and Antarctic Scientific Research Institute

"Microbiological and Immunological Studies of the Human Body in the Antarctic. III. Dynamics of Hematopoiesis in Polar Explorers During an Expedition"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 81-83

Abstract: The dynamics of the hemoglobin concentration, RBC and WBC counts, color index, and leukocyte formula was studied in 14 Antarctic explorers in relation to the time of year. The hemoglobin concentration was found to be directly related to solar activity. It decreased during the polar night when solar activity was low but increased to the normal value during the summer when solar activity was high. The RBC count fluctuated within narrow limits. The leukocyte count tended to decrease during the year. The color index curve virtually duplicated that of the hemoglobin concentration. The leukocyte formula shifted slightly to the left at first, i.e., 1/2

TASHPULATOV, R. Yu., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 81-83

the stabs increased while the segs, eosinophils, and lymphocytes remained unchanged and the monocytes decreased. During the latter part of the winter the number of stabs returned to the original level while the segs decreased and the eosinophils and lymphocytes increased. The relative and absolute lymphocytosis and moderate neutropenia persisted until the end of winter.

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UDC 547.26'118

USSR

KRUGLOV, S. V., IGNAT'YEV, V. M., <u>IONIN</u>, B. I., and PETROV, A. A., Leningrad Technological Institute imeni Lensovet

"Synthesis of Symmetric and Mixed Esters of Diphosphonous Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1480-1490

Abstract: A series of symmetric and mixed acetylene-, allene-, 1,3-dieneand alkendiphosphonates was synthesized. It was shown that hydrogenation of 1,3-dienephosphonates occurs selectively on the 1,4-position. It was established that the Arbuzov rearrangement of trialkyl phosphites with 1,4-dibromobutyne leads to the formation of a symmetric acetylenediphosphonate, while from the 1,4-dichlorobutyne a diphosphonate with a terminal allene group is formed, i.e. the reaction is accompanied by an acetyleneallene isomerization.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

UDC 541.67:547.341

USSR

ZAKHAROV, V. I., BELOV, YU. V., IONIN, B. I., and PETROV, A. A., Leningrad Technological Institute imeni Lensovet

"Study of the Spin-Apin Coupling in Flueroanhydrides of Phosphoric Acids by the Method of Double and Triple Nuclear Magnetic Resonance"

Moscow, Doklady Akademii Nauk SSSR, Vol 209, No 6, Apr 73, pp 1343-1346

Abstract: Analysis of double and triple resonance spectra was carried out by the method of subspectra: selective exposure to a high frequency field H2 of one of the subspectra in the resonance of the nucleus X leads to the merging of resonance lines of other nuclei in the same subspectrum. For example, in the spectrum of the difluoroanhydride of methanephosphonic acid, when the low frequency subspectrum p31 is exposed to high frequency field, the high frequency lines of the triplets H1 merge, and conversely, when the high frequency subspectrum P31 is exposed, the low frequency H1 triplet lines become merged. It follows from this that the constants H-F and F-P have being positive. To perform similar the opposite signs, the constant 3

analysis in case of the 2-chloro-X-propene-i-phosphonic acid difluoride, it is necessary to solve the spin-spin coupling of the ethylene proton with the protons of the methyl group, that is under conditions of triple resonance. 1/1

UDC 547.341:541.454 + 541.67

SKVORTSOV, N. K., TERESHCHENKO, G. F., IONIN, B. I., and PETROV, A. A., Leningrad Technological Institute Imeni Lensovet

"Investigation of the Protonation of Tertiary Phosphine Oxides by the Muclear Magnetic Resonance Method"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 981-987

Abstract: Protonation of phosphine oxides and related compounds was studied by the NMR method using the chemical shifts of $^{1}\mathrm{H}$ and $^{31}\mathrm{P}$. It was shown that protonshift data can be described by the amide function of acidity H_{A} . To describe results obtained from the chemical shifts of phosphorus, a new acidity function for phosphoryl compounds H_{PO} was developed. It shows a slow growth with increased concentration of sulfuric acid than the known functions H_{O} and H_{A} .

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USSR UDC 547.341

DOGADINA, A. V., IONIN, B. I., and PETROV, A. A., Leningrad Technological Institute Imeni Lensovet

"Reaction of Phosphorus Pentachloride With 1,3-Enynes"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, pp 1919-1925

Abstract: Reaction of phosphorus pentachloride with 1,3-enynes is accompanied by addition of hydrogen chloride, yielding 2,4-dichloro-2-alkenylphosphonic acid dichlorides which upon dehydrochlorination with triethylamine produce 2-chloro-1,3-butadienyl derivatives with the chlorine atom and the phosphorus containing group trans to each other. The structures of individual products were derived from PMR and NMR spectroscopical data.

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VDC 547.341

DOGADKINA, A. V., MINGALEVA, K. S., IONIN, B. I., and PETROV, A. A., Leningrad Technological Institute imeni Lensoveta

"Addition of Phosphorus Pentachloride to Acetylenes"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), Vyp 10, 1972, pp 2186-2193

Abstract: Formation of acid chlorides, esters, and phosphine oxides during the reaction of PCl₅ with acetylenic hydrocarbons is described. Oxidative phosphorylation of acetylenic hydrocarbons is also presented for comparison. The reaction of PCl₅ with tert-butylacetylene in benzene takes place at room temperature and after treatment with SO₂ yields the acid dichloride of 3,3-dimethyl-2-chloro-1-Z-butyl-phosphonic acid, (I), C₆H₁₀Cl₃OP, b.p. 110° C

(1 mm). Methylacetylene with PCl₂ under identical reaction conditions yields the acid dichloride of 2-chloro-Z² propenylphosphonic acid (II) ${}^{C_{3}}{}^{H_{L}}{}^{Cl_{3}}{}^{OP}$, b.p. 72-75° (1 mm), ${}^{2O}{}_{L}$ 1.5014, ${}^{2O}{}_{D}$ 1.5120, as well as the allyl isomer (III) and the acid dichloride of 2,2-dichloroporpylphosphonic acid (IV)

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DOGADKINA, A. V., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 10, 1972, pp 2186-2193

$$\begin{array}{c} \text{CH}_{3}\text{C} \equiv \text{CH} \xrightarrow{1) \text{ PCI}_{1}} \xrightarrow{\text{CH}_{5}} \text{C} = \text{C} \xleftarrow{\text{H}} \text{P(0)CI}_{2} + \\ + \text{CH}_{2} = \text{CCICH}_{2}\text{P(0)CI}_{2} + \text{CH}_{3}\text{CCI}_{2}\text{CH}_{2}\text{P(0)CI}_{2} \\ \text{III} \end{array}$$

Reaction of PCl₅ with ethylacetylene yields exclusively the acid dichloride of 2-chloro-2-bitenylphosphonic acid (V), $C_{\mu}H_{6}Cl_{3}OP$, b.p. 95°C (1 mm), d_{μ}^{20} 1.4265, n_{D}^{20} 1.5132. A noticeable amount of E-isomer (VI) was obtained in the reaction of PCl₅ with methylacetylene. Ethoxyacetylene easily reacts with PCl₅ by forming the acid dichloride of 2-chloro-2-ethoxy-2-vinylphosphonic acid (VII), b.p. 82-83°C (1 mm), d_{μ}^{20} 1.4630, n_{D}^{20} 1.5140.

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DOGADKINA, A. Y., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 10, 1972, pp 21-86-2193

$$RCII_{2}C = CII \xrightarrow{PCI_{2}} RCII_{2}$$

$$C = C \xrightarrow{P\{O\}CI_{2}} C = C$$

3/5

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USSR

DOGADKINA, A. V., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 10, 1972, pp 2186-2193

Other acid dichlorides (VIII-XII) were prepared in the course of the following reactions:

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DOGADKINA, A. V., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 10, 1972, pp 2186-2193

Reaction of the obtained acid dichlorides with ethanol in the presence of pyridine yields corresponding diethyl phosphonates. Some acid dichlorides (I-IV), (XII) react with ethylmagnesium bromide yielding 2-chloro-Z-alkenyl and alkynyl phosphine oxides. Properties of all prepared compounds along with their PMR and NMR are given.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

USSR UDC 547.341

MASHLYAKOVSKIY, L. N., ZAGUDAYEVA, T. A., IONIN, B. I., OKHRIMENKO, I. S., and PETROV, A. A., Leningrad Technological Institute Imeni Lensovet

"Synthesis of Derivatives of Thionephosphonic Acids With Conjugated Dienes"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2648-2656

Abstract: Gradual replacement of the halogen atoms in PSC1₂ by alkoxy1 radicals produced new ester-acid chlorides and diesters of 2-methylbuta-diene-1,3-thionephosphonic acid and bis-1,3-dienethionephosphonates. The ester acid chlorides of 1,3-dienethionephosphonic acids have higher thermal stability than the phosphoryl analogs because of the weaker basic properties of the P:S group and lower electrophilic strength of the phosphorus atom. Comparative analysis of the PMR spectra of the derivatives of 2-methylbutaduene-1,3-phosphonic and thionephosphonic acids showed that these compounds represent mixtures of various quantities of cis- and trans- isomers. The latter are stabilized by an intramolecular hydrogen bond with the chlorine atoms of the PSC1₂ group. P:S participates to a considerably lesser degree in formation of hydrogen bonding than the P:O group.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

USSR

UDC 538.27:546.18

IONIN. B. I., TIMFEYEVA, T. N.

"Use of Proton Magnetic Resonance for the Study of Organophosphorus Compounds"

Moscow, Uspekhi Khimii, Vol 41, 1972, pp 758-782.

Abstract: This review discuses methods of analysis of PMR spectra of organophosphorus compounds, discusses the basic features of chemical shifts of protons and the constants of proton-proton and proton-phosphorus spin-spin interactions, and analyzes the basic trends in the study of organophosphorus compounds by PMR methods. The peculiarities of the analysis of complex PMR spectra characteristic of organophosphorus compounds are discussed. The practical application of PMR spectroscopy lies primarily in the area of establishment of the structure and geometric characteristics of organic compounds. PMR has been widely used in organophosphorus chemistry recently for confirmation of the structure of five-member phosphorus-containing heterocycles, the products of the interaction of derivatives of trivalent phosphorus with conjugate systems.

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USSR UDC 547.26'118

TAUBE, D. O., VOVSI, B. A. (deceased), and IONIN, B. I., Leningrad Institute of Pharmaceutical Chemistry

"Reactions Between Amine Hypophosphites and Benzaldehyde"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 351-356

Abstract: Experiments are conducted which show that ammonium hypophosphite reacts anomalously with benzaldehyde to form N-benzyl- α -aminobenzylphosphonic and bis(N-benzyl- α -aminobenzyl)pyrophosphonic acids, whereas reactions with amine hypophosphites result in N-alkyl- α -aminobenzylphosphinic acids. A mechanism is suggested for the reaction. Ammonium hypophosphite with benzaldehyde in hydrochloric acid forms bis(α -hydroxybenzyl)phosphinic acid.

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UDC 547.341

DOCADINA, A. V., NECHAYEV, YU. D., IONIN, B. I., and PETROV, A. A., Leningrad Technological Institute imeni Lensovet

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, pp 1662-1668

Abstract: The addition of phosphorus pentachloride to phenylacetylene, \propto -chlorostyrene, acetophenone and \propto -bromostyrene gives 2-phenyl-2-chlorovinyl-phosphonic acid dichloride (I). The purpose of the present article was to establish the geometric configuration of I and a series of derivatives obtained from it by comparing parameters of the NMR spectra for these compounds with data for other styrylphosphonic derivatives whose structure was previously established by the authors. It was found that this reaction leads to the formation of products with a cis arrangement of chlorine and the phosphorus-containing group.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

UDC 547.341

USSR

MASHLYAKOVSKIY, L. N., ZAGUDAYEVA, T. A., IONIN, B. I., and OKHRIMENKO, I. S., Leningrad Technical Institute meni Lensovet

"Synthesis of Ester Acid Chlorides, Mixed Esters and Amidoesters of 1,3-Dienylphosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, pp 330-335

Abstract: The reaction of acid dichlorides with primary or secondary alcohols in presence of tertiary bases leads to replacement of Cl atoms with formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters of acid chlorides, mixed esters and ester amiwith formation of esters and ester amiwith for animal esters and ester amiwith for animal esters and esters and ester amiwith for acid chlorides, mixed esters and ester amiwith for animal esters and esters animal esters ani

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- 75 -

UDC 537.563:547.341

BOGOLYUBOV, G. M., PLOTNIKOV, V. F., IGNAT'YEV, V. M., and IONIN, B. I., Leningrad Technological Institute imeni Lensovet

"Organic Derivatives of the V-VII Group Elements. XV. Mass-Spectra of Unsaturated Phosphine Oxides"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 3, Mar 71, pp 517-520

Abstract: Mass spectra and appearance potentials of the basic ions of diethylpropylphosphine, diethyl-trans-propenylphosphine, diethylpropenylphosphine, and diethylallenylphosphine oxides are reported. Only few peaks with intensities higher than 10% appear in these spectra. The intensity of molecular and β -ions is small, the α - and π -ions predominating there. The intensity values M^+ in the mass spectra obtained agree with the localization of the positive charge on the molecular ion of phosphine oxides, specifically at the oxygen atom of the phosphoryl group. The relationship between the intensities of positive molecular ions and of the rear-ranged ones indicates intramolecular hydrogen bonding in transdiethylpropenylphosphine oxide. Mass spectral conversions of phosphine oxides depend on participation of ionic mesomeric system including phosphoryl group.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

1/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--INTERACTION OF PYROCATECHOL PHOSPHORUS ACID CHLORIDE WITH AMINO
ALCOHOLS AND AMINOPHENOLS -UAUTHOR-(03)-KHASKIN, A.N., ZAVLIN, P.M., IONIN, B.I.

COUNTRY OF INFO---USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 298-300

DATE PUBLISHED ---- 70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PYROCATECHOL, PHOSPHORUS ACIO, CHLORIDE, AMINO ALCOHOL, HETEROCYCLIC BASE COMPOUND, ORGANIC PHOSPHORUS COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3006/0817

STEP NO--UR/0079/70/040/002/0298/0300

CIRC ACCESSION NO--APOL34450

UNCLASSIFIED PROCESSING DATE--27NOV70 2/2 012 CIRC ACCESSION NO--AP0134550 ABSTRACT. MIXING EQUIMOLAR AMTS. OF HOCH ABSTRACT/EXTRACT--(U) GP-U-SUB2 CH SUB2 CH SUB2 NH SUB2, ET SUB3 N, AND CATECHYL CYCLOPHUSPHOROCHLORIDITE AT 0-5DEGREES IN ET SUB2 O GAVE ET SUB2 N.HCL AND 72.3PERCENT I IR EQUALS NHCH SUB2 CH SUB2 OH) (III), M. SIMILARLY WAS PREPD. I (R EQUALS P, HOC SUB6 H SUB4 NH), 112-140EGREES. M. 126-8DEGREES. HOWEVER, WHEN PREPM. OF IT WAS ATTEMPTED WITHOUT THE HCL-SCAVENGER THE PRODUCT WAS 81PERCENT 2, AMINOETHYL CATECHYL CYCLOPHOSPHITE (I, R EQUALS OCH SUB2 CH SUB2 NH SUB2); HCL SALT M. 121-20EGREES. SIMILARLY P.AMINOPHENOL GAVE (I. R EQUALS P.H SUB2 NC SUB6 H SUB4 D); HCL SALT M. 208-9DEGREES. FACILITY: LENINGRAD. INST. KINGINZH., LENINGRAD, USSR.

USSR

UDC: 547.341

MASHLYAKOVSKIY, L.N., IONIN, B.T., OKHRIMENKO, I.S., and PETROV, A.A., Leningrad Technological Institute imeni Lensovet, Leningrad, Ministry of Higher and Secondary Specialized Education RSFSR

"Phosphine Oxides Containing 1, 3-Diené Grouping at Phosphorus Atom"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 804-808

Abstract: A previous article by the authors reported the synthesis of individual 1,3-dienephosphine oxides by the interaction of unsaturated phosphonyl dichlorides with Grignard reagents. The present article gives more detailed information on the synthesis and structure of these compounds. The interaction of 1,3-dienephosphonic and chlorobutenephosphonic acid dichlorides with Grignard reagents with subsequent dehydrochlorination by alcoholic alkali gives previously undescribed tertiary phosphine oxides containing a 1,3-diene grouping at the phosphorus atom. The structure of the resultant phosphine oxides is confirmed by the results of catalytic hydrogenation.

The formation of compounds with the cis and trans configura-

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

MASHLYAKOVSKIY, L. N., et al., Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 804-808

tion with respect to the double bond in the α , β -position to phosphorus is explained on the basis of the idea of the bimolecular mechanism of trans-elimination and the influence of steric interactions of substituents at the β -carbon atom with the phosphorus-containing grouping.

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USSR

UDC 538.27 : 547.341

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TIMOFEYEVA, T. N., SEMAKOV, B. V., and IONIN, B. I., Leningrad Technological Institute imeni Lensevet, Leningrad, Ministry of Higher and Secondary Specialized Education RSFSR, and All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev, Leningrad, State Committee of Standards, Measures, and Measuring Instruments USSR

"Analysis of PMR Spectra of Ethylenephosphonic Acid Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1169-1170

Abstract: The authors analyzed the proton spectra of ethylenephos-phonic acid derivatives, viz. the acid dichloride, dimethyl ester, bis-dimethylamide and diethylvinylphosphine oxide. The trial-and-error method, employing a "Razdan-2" computer, was used to correlate lines and for preliminary calculations. The final calculations were performed by means of a "Minsk-2" computer according to an iterative program of the LAOCM type. The chemical shifts of the two terminal protons (A and B) are practically the same in the spectra of all the 1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

USSR

TIMOFEYEVA, T. N., et al, Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1169-1170

studied compounds, indicating the insignificant contribution of the magnetic anisotropy of P=0 to chemical proton shifts. The authors thank A. U. STEPANYANTS, YU. L. KLEYMAN and N. V. MORKOVIN for taking the spectra.

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Organophosphorus Compounds

USSR

UDC: 547.183

KHASKIN, A. N., ZAVLIN, P. M., and IONIN, B. I., Leningrad Institute of Cinema Engineers, Leningrad, Ministry of Culture RSFSR

"Interaction of Catecholphosphorous Acid Chloride With Amino Alcohols and Aminophenols"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, pp 298-300

Abstract: The interaction of catecholphosphorous acid chloride with ethanolamine and p-aminophenol both in the presence and in the absence of hydrogen chloride acceptors was studied. It was found that dydroxyethyl(phenyl) amides of catecholphosphorous acid are formed in the presence of hydrogen chloride acceptors and hydrochlorides of aminoethyl(phenyl) esters of catecholphosphorous acid in the absence of hydrogen chloride acceptors.

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VDC 547.241

TIMOFEYEVA, T. N., KLEYMAN, YU. L., and IONIN, B. I., Leningrad Technological Institute imeni Lensovet, Leningrad, Ministry of Higher and Secondary Specialized Education RSFSR

"Analysis of Signals of Ethyl Group in PMR Spectra of Ethanephosphonic Acid Derivatives and Triethylphosphine Oxide"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1046-1050

Abstract: The article uses the previously suggested method of averaging of theoretical spectra for the case of an ethyl group linked with magnetic nuclei with spin 1/2. The PMR spectra of acid dichlorides and difluorides, dimethyl ester and bisdimethylamide of ethanephosphonic acid and triethylphosphine oxide are considered. The spectra of such compounds belong to type A3B2X, and the subspectra method suggested by P. T. NARASHIMHAN and M. T. ROGERS is convenient for their analysis. A "Razdan-2" digital computer was used to calculate line frequencies and intensities, employing a specially compiled program "A3B2X With Averaging," which provides 1/2

USSR

TIMOFEYEVA, T. N., et al, Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1046-1050

for the calculation of frequencies and intensities of two subspectra and their averaging. The results indicate that variations in the constants for H-P spin-spin coupling are subject to the same regularities as in the case of H-H spin-spin coupling.

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010 1/2 UNCLASSIFIED PROCESSING DATE--13NOV70 TITLE--PHOSPHINE OXIDES CONTAINING A 1,3, DIENT GROUPING AT THE PHOSPHORUS

AUTHOR-(04)-MASHLYAKOVSKIY, L.N., IONIN, B.I., OKHRIMENKO, I.S., PETROV,

A . A .

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40 (4), 804-8

DATE PUBLISHED---- 70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOSPHORUS OXIDE, DIENE, ORGANOMAGNESIUM COMPOUND, CATALYTIC HYDROGENATION, BUTACIENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3002/1371

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CIRC ACCESSION NO--AP0128771

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UNCLASSIFIED PROCESSING DATE--13NOV70 CIRC ACCESSION NO-APO128771

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. TO PHMGBR FROM 3 G MG PREPD. IN ET SUB2 O WAS ADDED WITH COGLING 10.8 G MECH:CHCH:CHP(O)CL SUB2, AND THE MIXT. HEATED 3 HR, THEN REFLUXED IN (SHOWN ON MICROFICHE). THE CRUDE REACTION PRODUCT OF II AND PHMGBR WAS TREATED WITH ALC. KOH 20 HR AT ROOM TEMP. AND 0.5 HR AT 50DEGREES TO YIELD 22PERCENT CH SUB2:CHCH:CHP(O)PH SUB2, M. 105-7DEGREES. THE PRODUCTS OF HYDROGENATION WERE MIXED CIS-TRANS FORMS IN CASE OF DERIVS. OF 2,METHYL,1,3,BUTADIENE, BUT IA WAS THE TRANS ISOMER, AS WAS ITS PRECURSOR DIENE DERIV. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 519.2

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IONIN, G. L., BREZGUNOVA, N. M.

"A Single-Queue System With Repeated Demands in the Case of Γ -Distribution of Serving Duration"

Latv. mat. yezhegodnik (Latvian Mathematics Annual), 1972, 11, pp 65-71 (from RZh-Kibernetika, No 5, May 73, abstract No $5\overline{V80}$ by the authors)

Translation: An investigation is made of the probability characteristics of a single-queue system with repeated demands in the case of Γ -distribution of serving duration. The method of generating functions is used to find analytical expressions for the probability of losses of primary demands and the average number of sources of repeated demands.

1/1

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110019-4"

1/2 045 UNCLASSIFIED PROCESSING DATE--20NOV70 TITLE--TYPLS OF HEAT ENERGY TRANSPORT IN METALLIC PLASMA DEPOSITED COATING AND A CERTAIN QUALITATIVE EVALUATION OF THEIR HEAT CONDUCTIVITY -U-AUTHOR-[C2]-SMIRONOV, E.V., ICNIN, V.YE.

CCUNTRY OF INFG--USSR

SOURCE--INZHENERNC-FIZICHESKII ZHURNAL, VOL. 18, MAR. 1970, P. 436-441

DATE PUBLISHED ---- MARTO

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA TORCH SPRAYING, HEAT TRANSFER THEORY, METAL COATING, THERMAL CONDUCTIVITY, CRYSTAL LATTICE VIBRATION, RADIATIVE HEAT TRANSFER, MOLECULAR KINETICS

CENTREL MARKING-NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED PROXY REEL/FRAME--1996/1566

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CIRC ACCESSION NO--APOIL3549

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2/2 045 UNCLASSIFIED PROCESSING DATE--20NOV7C

CIRC ACCESSION NO--APOl18549

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. DISCUSSION OF THE MECHANISMS OF HEAT ENERGY TRANSPORT IN COARSE GRANE ORIENTED COATING OBTAINED BY PLASMA DEPOSITION ON A SUBSTRATE UNDER ATMOSPHERIC CONDITIONS.

SPECIFICALLY STUDIED ARE HEAT ENERGY TRANSPORT BY ELASTIC CRYSTAL LATTICE VIBRATIONS (BY PHONONS), HEAT ENERGY TRANSPORT BY ELECTRONS, MOLECULAR HEAT ENERGY TRANSPORT IN THE PURES OF COATINGS, AND HEAT ENERGY TRANSPORT BY RADIATION IN THE PURES OF PLASMA DEPOSITED METALS. QUALITATIVE ESTIMATES OF THE THERMAL CONDUCTIVITY OF THE COATINGS ARE OBTAINED.

PRUCESSING DATE--230CTZO UNCLASSIFIED TITLE--REACTION OF THE PRODUCT OF RHODIUM CARBONYLATION BY 007 DIMETHYLECRMAMIDE WITH 8 HYDROXYQUINOLINE AND 8 MERCAPTOQUINOLINE -U-AUTHOR-(05)-VARSHAVSKIY, YU.S., KNYAZEVA, N.N., CHERKASOVA, T.G., IVANNIKOVA. N.V., LONINA. T.I. COUNTRY OF INFO--USSR SOURCE--ZH. NEURG. KHIM. 1970, 15(3), 715-22 DATE PUBLISHED----70 SUBJECT AREAS--CHEMISTRY TOPIC TAGS--RHODIUM COMPOUND, COMPLEX COMPOUND, CARBONYL RADICAL, FORMIC ACID. AMIDE. QUINOLINE, HYDROXYL RADICAL CONTROL MARKING--NO RESTRICTIONS DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0078/70/015/003/0715/0722 PROXY REEL/FRAME--1995/1469 CIRC ACCESSION NO--APO116906 UNCLASSIFIED

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CIRC ACCESSION NO--APOLIGOO

CIRC ACCESSION NO--APOLIGOO

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. BROWN VIOLET (RHL(CO) SUB2);
BROWNISH (RHL PRIME (CO) SUB2), AND ORANGE (RHL PRIME H(L PRIME)), FORM
IN HOONME SUB2 SOLNS. FO RHCL SUB3 WITH SALTS OF 8 HYDROXYQUINOLINE (LH)
OR 8 MERCAPTOQUINOLINE (L PRIME H), RESP. THEIR STRUCTURE IS ANALOGOUS
TO THAT OF DICARBONYL COMPLEXES OF IR(I) AND RH(I) AND SCHIFF BASES. L
PRIME H EASILY REPLACES CO GROUPS IN THE INNER COORDINATION SPHERE:
SOME (RH(L PRIME H)L) SEPD. EVEN AT 1:1 L PRIME H:RH RATIO. THIS AND
THE EASE OF THE REPLACEMENT OF CO GROUPS FROM (RHL PRIME (CO) SUB2) BY L
POINT TO A STRONG TRANS EFFECT OF L PRIME LIGANOS.

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